

CLAIMS

What is claimed is:

1. A process for transforming pre-used asphaltic roofing shingles into products comprising the steps of
 - (a) receiving said shingles without foreign material and with nails
 - (b) reducing said shingles into particles in a comminutor
 - (c) removing the nails from the particles by first means of a magnet
 - (d) separating the particles into three sizes
 - (e) returning the largest particles to the comminutor
 - (f) weighing a predetermined quantity of each of the two smaller sizes of particles as a second means to control product thickness
 - (g) combining the two predetermined quantities into a charge
 - (h) procuring an empty mold configured to the shape of the product
 - (i) covering the inside faces of said mold with a release agent
 - (j) charging the mold with the charge
 - (k) distributing the charge evenly within the mold
 - (l) placing the charged mold in a press
 - (m) compressing the charge with high pressure
 - (n) maintaining said pressure until the charge is fully compressed
 - (o) releasing the pressure

- (p) removing the mold from the press
 - (q) opening the mold
 - (r) ejecting the formed material from the mold
 - (s) inspecting said material and delivering it as product to a customer.
2. The invention as in claim 1 in which the comminutor pulls said shingles downwardly through a plurality of pairs of high-speed, counter-rotating, inter-meshing blades, stacked within a housing as a third means of reducing said shingles to particles at the about the same temperature.
3. The invention as in claim 1 in which the release agent is either canola oil or diluted dishwashing liquid as a fourth means for permitting cold-forming of the product.
4. The invention as in claim 1 in which the said pressure is substantially greater than 5,000 p.s.i. as a fifth means of creating a product with a density of about 120 lbs. per cubic foot.
5. The invention as in claim 1 in which the comminutor pulls said shingles downwardly through a plurality of pairs of high-speed, counter-rotating, inter-meshing blades, stacked within a housing, and the release agent is either canola oil or diluted dishwashing liquid, and the pressure is substantially greater than 5,000 p.s.i..
6. The invention as in claim 5 in which the pressure is

about 11,500 p.s.i..

7. The invention as in claim 1 in which the said shingles are delivered with nails and with foreign matter that is removed after delivery as a sixth means of satisfying the requirements of some roofers.
8. The invention as in claim 1 in which the mold is charged with a predetermined volume of particles as a seventh means of simplifying the creation of the charge.
9. The invention as in claim 1 in which some heat is applied both to the particles and to the mold or to one and not to the other prior to pressing as a seventh means of changing the characteristics of the product.
10. The invention as in claim 1 in which material such as coloured stone chips, letters, emblems, comminuted glass, and plastic are placed in the mold in advance of the charge as an eighth means of providing an identity, a message, a surface finish or coloration.
11. The invention as in claim 1 in which the products comprise at least paving bricks, paving blocks, paving slabs, kerbs, parking stops, devices for calming traffic, and imitation stone.
12. Products comprising at least paving bricks, paving blocks, paving slabs, kerbs, parking stops, devices for calming traffic, and imitation stone formed from pre-used asphaltic roofing shingles, in which

- (a) said shingles are received without foreign material but with nails
- (b) said shingles are reduced to particles in a comminutor
- (c) the particles are separated from the nails by first means of a magnet
- (d) the particles are separated into three sizes
- (e) the largest particles are returned to the comminutor
- (f) the particles of the two smaller sizes are weighed into a predetermined quantity as a second means to control product thickness
- (g) the particles in the two predetermined quantities are combined into a charge
- (h) the particles in the charge are loaded into an empty mold configured to the shape of the product with its inside faces covered with a release agent
- (i) the particles in the charged mold are placed in a press
- (j) the particles in said mold are compressed with high pressure that is maintained until the charge is fully compressed
- (k) the particles in the mold are released from the pressure
- (l) the particles in the mold are removed from the press and the mold opened
- (m) the particles that have been formed are ejected from the mold
- (n) the formed particles are inspected and delivered to a customer in the form of a product.

13. The product as in claim 12 in which the comminutor pulls said shingles downwardly through a plurality of pairs of high-speed, counter-rotating, inter-meshing blades, stacked within a housing.

14. The product as in claim 12 in which the release agent is canola oil or diluted dishwashing liquid.
15. The product as in claim 12 in which the high pressure is substantially greater than 5,000 p.s.i..
16. The product as in claim 12 in which the comminutor is one that pulls said shingles downwardly through a plurality of pairs of high-speed, counter-rotating, inter-meshing blades, stacked within a housing , and the release agent is either canola oil or diluted dishwashing liquid, and the pressure is substantially greater than 5,000 p.s.i..
17. The product as in claim 12 in which the pressure applied to the mold is about11,500 p.s.i..
18. The product as in claim 12 in which the shingles and the mold together or alone are heated.